

BANKING MANAGEMENT SYSTEM

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BANK MANAGEMENT SYSTEM

Bank Management System is used to Keep the records of clients, employee etc in Bank. The bank management system is an application for maintaining a person's account in a bank. The system provides the access to the customer to create an account, deposit/withdraw the cash from his account, also to view reports of all accounts present, sanction loans, insurance. The following presentation provides the specification for the system.

PROBLEM STATEMENT

To develop a software for solving financial applications of a customer in banking environment in order to nurture the needs of an end banking user by providing various ways to perform banking tasks such as ATM, Loans, Insurance, Consumer Banking, Investment Banking, etc. Also to enable the user's workspace to have additional functionalities which are not provided under a conventional banking software to enhance customer experience.

OBJECTIVES

We have developed a software for solving financial applications of a customer in banking environment in order to nurture the needs of an end banking user by providing various ways to perform banking tasks such as ATM, Loans, Insurance, Consumer Banking, Investment Banking, etc. Also to enable the user's workspace to have additional functionalities which are not provided under a conventional banking software to enhance customer experience.

OBJECTIVES

- Every department network is separated. All staffs can communicate through emails and an internal chatting system using port 465.
- There should be a guest Wi-Fi is provided to customers. This is an isolated network isolated with only web browsing capabilities.
- The IT department consists of a small team that the staffs are mainly performing operational tasks instead of planning and implementations. Your team is required to provide detail documentations so that the IT staffs can troubleshoot their systems with references.
- Your team are working to strike a balance between network performance, security and cost effectiveness so that your team can close this deal.

SCOPE OF WORK

Our BMS is responsible for implementing, maintaining, supporting, developing and, in some cases, designing communication networks within an organization. Our focus is to ensure that high availability and stable network infrastructure to provide maximum performance for their users. Occasionally we will help on documents and perform analysis of all networking topologies.

We are responsible for the day-to-day operation to maintaining computer network and solving the problems that might occur. Mainly focusing on installing and configuring computer networks and identifying any problems that arise with computer networks and system. We also help on prepare research plans and documented projects for all LAN and WAN based methods. Identify and resolve all technical issues in the matter of formulation and creation of strategies.

DEPARTMENTS IN OUR SYSTEM

Our Bank Management System has several departments

- IT Department
- ATM
- Investment Banking
- Consumer Banking
- Insurance
- Loan
- Guest Wifi

We have simulated our bank management system using Cisco Packet Tracer

NETWORKING FEATURES

We have performed the project using CISCO Packet Tracer, we have implemented our BMS using the following hardware components:

- **3650-24PS Multilayer Switch**
- **2960-24TT Switch**
- **Routers**
- **Server-PT Server**
- **Client PC/ Client Smartphone**

DESIGN FEATURES

Vlan/Subnet	ACL Permission
Vlan10: IT Department	<ul style="list-style-type: none">- Remote access (SSH) to all the networking devices for troubleshooting, except ATM network.- perform remote into the branch through VPN for troubleshooting.- communicate through emails and an internal chatting system using port 465.
Vlan11: ATM	<ul style="list-style-type: none">- Isolated network and directly connect to Headquarter network through 5556 port.- All staffs including IT support has no access to the ATM network.
Vlan12: Consumer Banking	<ul style="list-style-type: none">- communicate through emails and an internal chatting system using port 465.
Vlan13: Investment Banking	<ul style="list-style-type: none">- communicate through emails and an internal chatting system using port 465.- Internet access (HTTP and HTTPS only) to support overseas customers.
Vlan14: Loans	<ul style="list-style-type: none">- communicate through emails and an internal chatting system using port 465.- Internet access with port 9999 to check customer credit scores.
Vlan15: Insurance	<ul style="list-style-type: none">- communicate through emails and an internal chatting system using port 465.- port 7772 to connect to national insurance portal.-No internet access.
Vlan16: Guest Wifi	<ul style="list-style-type: none">-Only can connect to WiFi

NETWORK TOPOLOGIES

1./ IT Department

This site consists of 2 IT administrators, and 1 server. The default gateway for IT Department is 192.168.10.1/24. IT Department is using VLAN 10 to control access between the groups.

2./ ATM

As for site 2, this would be the ATM Department which consists 3 ATM and 1 Switch of ATM. ATM Department is using VLAN 11 to control access between the departments.

3./ Consumer Banking

It consists 3 Consumer PC and 1 Switch for Consumer Department, and it's using VLAN 12 to control access between the departments.

NETWORK TOPOLOGIES

4./ Investment Banking

As for Site 4, This is Investment Banking which consists 3 PC of Investment and 1 switch for using VLAN 13 to control access between the department.

5./ Loans

This Site 5 is for the Loans Department and its consists 3 Loans PC for staff and 1 switch for Loans Department. Its using VLAN 14 to control access between the departments.

6./ Insurance

The figure above is the site dedicated for the Insurance department. It consists 3 Insurance PC for staff and 1 Switch for Insurance Department, and it's using VLAN 15 to control access between the departments.

NETWORK TOPOLOGIES

7./ Guest Wifi

As for Site 4, This is Guest Wifi Design which only consists 1 Wireless router and 1 example device of user for access into internet. Its using VLAN 16 that only allow users to access the internet.

8./ Site-to-Site VPN

Site-to-Site IPSec VPN Tunnels are used to allow the secure transmission of data and perform remote into the branch for troubleshooting. The VPN tunnel is created over the Internet public network and encrypted using a number of advanced encryption algorithms to provide confidentiality of the data transmitted between the two sites.

IP CONFIGURATION

IT Department

Device	Model	Port	IP Address	Subnet Mask	Default gateway
IT Admin	PC-PT	Fe0	192.168.10.100	255.255.255.0	192.168.10.1
IT Admin2	PC-PT	Fe0	192.168.10.200	255.255.255.0	192.168.10.1
Server	Server-PT	Fe0	192.168.10.254	255.255.255.0	N/A
SwitchIT	2960-24TT	N/A	N/A	N/A	N/A

ATM

Device	Model	Port	IP Address	Subnet Mask	Default gateway
ATM	PC-PT	Fe0	192.168.20.101	255.255.255.0	192.168.20.1
ATM2	PC-PT	Fe0	192.168.20.201	255.255.255.0	192.168.20.1
ATM3	PC-PT	Fe0	192.168.20.301	255.255.255.0	192.168.20.1
SwitchATM	2960-24TT	N/A	N/A	N/A	N/A

IP CONFIGURATION

Consumer Banking

Device	Model	Port	IP Address	Subnet Mask	Default gateway
ConsuPC	PC-PT	Fe0	192.168.30.101	255.255.255.0	192.168.30.1
ConsuPC2	PC-PT	Fe0	192.168.30.201	255.255.255.0	192.168.30.1
ConsuPC3	PC-PT	Fe0	192.168.30.301	255.255.255.0	192.168.30.1
SwitchConsumer	2960-24TT	N/A	N/A	N/A	N/A

Investment Banking

Device	Model	Port	IP Address	Subnet Mask	Default gateway
InvestPC	PC-PT	Fe0	192.168.40.101	255.255.255.0	192.168.40.1
InvestPC2	PC-PT	Fe0	192.168.40.201	255.255.255.0	192.168.40.1
InvestPC3	PC-PT	Fe0	192.168.40.301	255.255.255.0	192.168.40.1
SwitchInvest	2960-24TT	N/A	N/A	N/A	N/A

IP CONFIGURATION

Loans

Device	Model	Port	IP Address	Subnet Mask	Default gateway
LoansPC	PC-PT	Fe0	192.168.50.101	255.255.255.0	192.168.50.1
LoansPC2	PC-PT	Fe0	192.168.50.201	255.255.255.0	192.168.50.1
LoansPC3	PC-PT	Fe0	192.168.50.301	255.255.255.0	192.168.50.1
SwitchLoans	2960-24TT	N/A	N/A	N/A	N/A

Insurance

Device	Model	Port	IP Address	Subnet Mask	Default gateway
InsuPC	PC-PT	Fe0	192.168.60.101	255.255.255.0	192.168.60.1
InsuPC2	PC-PT	Fe0	192.168.60.201	255.255.255.0	192.168.60.1
InsuPC3	PC-PT	Fe0	192.168.60.301	255.255.255.0	192.168.60.1
SwitchInsu	2960-24TT	N/A	N/A	N/A	N/A

IP CONFIGURATION

Guest WiFi

Device	Model	Port	IP Address	Subnet Mask	Default gateway
Guest-Wifi Router	HomeRouter-PT-AC	N/A	N/A	N/A	N/A
GuestDevice	SMARTPHONE-PT	Wireless0	192.168.70.2 <small>ATM</small>	255.255.255.0	192.168.70.1

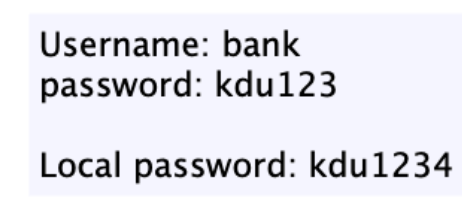
Multilayer Switch

Device	Model	Port	IP Address	Subnet Mask	Default gateway
Multi-sw 1(MAIN)	3650-24PS	Vlan10	192.168.10.1	255.255.255.0	N/A
		Vlan11	192.168.20.1	255.255.255.0	
		Vlan12	192.168.30.1	255.255.255.0	
		Vlan13	192.168.40.1	255.255.255.0	
		Vlan14	192.168.50.1	255.255.255.0	
		Vlan15	192.168.60.1	255.255.255.0	
		Vlan16	192.168.70.1	255.255.255.0	
		Vlan17	192.168.80.1	255.255.255.0	



Physical






[Root]

 Simulation

ISR4321

New Delete

Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Peri
	Successful	Mult...	LoansPC	ICMP		0.000	
	Successful	Mult...	InvestPC	ICMP		0.000	
	Successful	Mult...	ConsuPC	ICMP		0.000	